

USSN: 09/683,720

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AMENDMENTS TO THE CLAIMSClaims (status identifier)

- A1
1. (currently amended) A method of processing a thermal element group to create a printed image, the method comprising:
- providing printing parameters for a supply;
 - ~~determining a dot history pattern and a number of thermal elements for the thermal element group;~~
 - assigningselecting a plurality of thermal elements to themake up a selected thermal element group;
 - determining a dot history pattern, the dot history pattern based on the number of thermal elements determined for theselected thermal element group made up of the plurality of thermal elements;
 - determining a thermal element number;
 - generating a packed table, the packed table comprising values based on the supply printing parameters, selected thermal element group, the dot history pattern, the number of thermal elements for the thermal element group, and the thermal elements assigned to theand the thermal element group; number, and
 - wherein the printed image is created using a bit map pattern, a packed dot history pattern, storing the packed table, and the printing parameters, each of which has been stored in a printer memory for use in creating a printed image.
2. (currently amended) The method of Claim 1, wherein the providing the printing parameters ~~comprises~~ step comprises providing a microstrobe number and microstrobe energy values.
3. (currently amended) The method of Claim 1, wherein the providing the printing parameters step includes providing the printing parameters using a memory cell associated with the supply ~~provides the printing parameters.~~
4. (currently amended) The method of Claim 1, wherein the ~~packed~~ determining the dot history pattern ~~step~~ comprises at least one site determining adjacent thermal elements by determining a plurality of sites associated with ~~the thermal element~~ elements adjacent to the selected thermal element ~~elements.~~

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5. (currently amended) The method of Claim 1, wherein the ~~packed~~determining the dot history pattern step comprises ~~at least one site based on a~~determining prior generation of a selected thermal elements by determining a plurality of sites associated with the prior generation of the selected thermal elements.

6. (currently amended) The method of Claim ~~1, 4~~, wherein the ~~packed~~determining the dot history pattern step comprises ~~at least one site based on a~~determining prior generation of a thermal element adjacent to a selected thermal elementadjacent thermal elements by determining a plurality of sites associated with the prior generation of the adjacent thermal elements.

7. (currently amended) The method of Claim 1, wherein the ~~bit map pattern~~comprises values of bit map pattern data, the bit map pattern data comprising a plurality of ones and zerosfurther comprising determining an index length based on the thermal element number.

8. (currently amended) The method of Claim 7, wherein the ~~ones and zeros~~represent an instruction to generate a dot or not generate a dotfurther comprising determining a plurality of index values based on the determined dot history pattern.

9. (currently amended) The method of Claim 1, wherein the ~~packed table~~comprises a packed index, a packed index length, packed index values, divided microstrokes, packed binary pulse numbers, and packed strobe numbersfurther comprising determining a total energy value based on an amount of energy needed for pre-heating each thermal element.

10. (currently amended) The method of Claim 1, wherein ~~the packed table~~further comprising determining the packed table is based on a number of possible energy value combinations and a packed thermal element number.

11. (currently amended) The method of Claim 1, wherein ~~generation of the packed table~~comprises inserting the selected numberfurther comprising determining an index length such that the length equals a number of possible energy value combinations for each of the plurality of thermal elementsinto the selected dot history patternraised to a power equal to the thermal element number.

12. (currently amended) The method of Claim ~~1, 11~~, wherein the ~~thermal element group~~comprises selecting a plurality of thermal elementsstep includes selecting at least one of a plurality of consecutive thermal elements, sequential thermal elements, and adjacent thermal elements.

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13. (original) A method of processing a thermal element group to create a printed image, the method comprising:

accessing, from a specific supply, printing parameters comprising a microstrobe number and microstrobe energy values and storing the microstrobe number and microstrobe energy values in a printer memory;

determining a dot history pattern;

determining a number of thermal elements for the thermal element group;

assigning thermal elements to the thermal element group based on the number of thermal elements determined for the thermal element group;

packing the thermal element group into the dot history pattern to generate a packed dot history pattern;

determining a packed thermal element number based on the packed dot history pattern;

creating a packed index having a packed index length, the packed index length based on the packed thermal element number, and determining packed index values to occupy the packed index length, the packed index values based on the packed dot history pattern;

dividing microstrokes, the microstrokes based on the microstrobe number stored in the printer memory, such that divided microstrokes are produced;

assigning packed binary pulse numbers to the divided microstrokes based on a strobe pattern, the packed binary pulse numbers corresponding to each of the packed index values occupying the packed index length;

determining packed strobe numbers based on the packed binary pulse numbers, the packed strobe numbers corresponding to each of the packed index values occupying the packed index length;

wherein the printed image is created by using a bit map pattern, the packed dot history pattern, the packed index values, the packed strobe numbers, and the microstrobe energy values.

14. (currently amended) The method of Claim 13, wherein further comprising storing one or more of the bit map pattern, the packed dot history pattern, the packed index values, and the packed strobe numbers has been stored in a printer memory.

15. (currently amended) The method of Claim 13, wherein accessing the printing parameters is accomplished by further comprising loading a cartridge containing a supply of ribbon and containing the printing parameter into a printer.

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16. (currently amended) The method of Claim 15, ~~wherein the cartridge comprises~~further comprising storing the printing parameters in a memory cell secured to the cartridge, the memory cell having the printing parameters stored therein.

17. (currently amended) The method of Claim 16, ~~wherein~~further comprising erasing the memory cell is erased after exhausting the supply of ribbon stored~~contained~~within the cartridge is exhausted.

18. (currently amended) The method of Claim 16, ~~wherein the memory cell contains~~further comprising unlocking an electronic lock capable of being unlocked by in the memory cell with an electronic key associated with the printer.

19. (currently amended) The method of Claim 18, ~~wherein~~further comprising accessing the electronic key accessed by the printer and used to unlock and unlocking, using the key, the supply specific printing parameters stored in the memory cell.

20. (currently amended) The method of Claim 16, ~~wherein~~further comprising selecting the memory cell comprises a memory selected from one of a group consisting of a solid-state memory device, a RAM, a non-volatile RAM, an EEPROM, and a flash memory.

21. (currently amended) The method of Claim 16, ~~wherein the supply cartridge is~~further comprising providing an ergonomically designed to compliment a hand of a printer operator supply cartridge.

22. (currently amended) The method of Claim 13, wherein the thermal elements assigned to the group of thermal elements ~~comprise~~assigning step further comprises assigning consecutive thermal elements.

23. (original) A method of processing a thermal element group to create a printed image, the method comprising:

accessing, from a specific supply, printing parameters comprising a microstrobe number and microstrobe energy values and storing the microstrobe number and microstrobe energy values in a printer memory;

determining a dot history pattern;

determining a number of thermal elements for the thermal element group;

assigning thermal elements to the thermal element group based on the number of thermal elements determined for the thermal element group;

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packing the thermal element group into the dot history pattern to generate a packed dot history pattern;

determining a packed thermal element number based on the packed dot history pattern;

creating a packed index having a packed index length, the packed index length based on the packed thermal element number, and determining packed index values to occupy the packed index length, the packed index values based on the packed dot history pattern;

dividing microstrokes, the microstrokes based on the microstroke number stored in the printer memory, such that divided microstrokes are produced;

assigning packed binary pulse numbers to the divided microstrokes based on a strobe pattern, the packed binary pulse numbers corresponding to each of the packed index values occupying the packed index length;

determining packed strobe numbers based on the packed binary pulse numbers, the packed strobe numbers corresponding to each of the packed index values occupying the packed index length, until an entire raster line of packed strobe numbers is ascertained;

wherein the printed image is created by using a bit map pattern, the packed dot history pattern, the packed index values, the entire raster lines of the packed strobe numbers, and the microstroke energy values.

24. (currently amended) The method of Claim 23, wherein further comprising storing one or more of the bit map pattern, the packed dot history pattern, the packed index values, and the entire raster lines of the packed strobe numbers has been stored in printer memory.

25. (currently amended) The method of Claim 23, wherein further comprising creating the printed image is created after two or more of the entire raster lines have been printed.

26. (original) The method of Claim 23, wherein the method further comprises using a component to aid in processing, the component selected from a group consisting of a keyboard, a mouse, an operator, a liquid crystal display, and a monitor.

27. (currently amended) The method of Claim 23, wherein creating the printed image includes using the bit map pattern, and the bit map pattern comprises values of bit map pattern data.

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28. (currently amended) The method of Claim 27, ~~wherein~~ further comprising
representing the values of bit map pattern data comprise a plurality of ones and zeros.

29. (currently amended) The method of Claim 28, ~~wherein each of the ones and~~
~~zeros represent~~ further comprising providing an instruction to, based on the representing of the
bit map pattern data, to either generate a dot or not generate a dot.